REMARKS

In accordance with the foregoing, the specification and claims 6 and 11 have been amended. Claims 1-13 and new claim 14 are pending and under consideration. No new matter is believed to have been added.

Figures 10-12 have been objected to because the column width within each of the figures does not appear to be wide enough or the word font is too large. Figures 10-12 have been corrected as suggested by the Examiner. Accordingly, withdrawal of the objection to Figures 10-12 is respectfully requested.

Line 6 on page 18 of the disclosure is objected to because the specification incorrectly identifies Figure 11. Page 18, line 6 has been amended to address the Examiner's objection. Withdrawal of the objection as to the specification is respectfully requested.

Claim 6 has been objected to because of informalities. Claim 6 has been amended to address the Examiner's objection. Withdrawal of the objection as to claim 6 is respectfully requested.

Claim 11 is rejected under 35 U.S.C. §101 as directed toward a non-patentable subject matter. This rejection is respectfully traversed. Claim 11 has been amended. Therefore, Applicant respectfully submits that claim 11 satisfies the requirements of 35 U.S.C. §101. Thus, withdrawal of the rejection is respectfully requested.

Claims 5 and 6 are rejected under 35 U.S.C. §112, Second Paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. This rejection is respectfully traversed.

Office Action alleges claims 5 and 6 are unclear as to which of the plurarlity of extracted validation items the second generating unit (in claim 1) bases the generation of the input/output sequence on, now that a plurality of validation items are extracted by the extracting unit. (See Office Action, page 4).

Applicant respectfully submits that a person of ordinary skill in the art would find claims 5 and 6 clear. Specifically, regarding Figures 9 and 13, the specification clearly describes the extracting unit extracting a plurality of validation items based on a priority of each of the validation items. (See Specification, page 18, lines 10-14 and page 21, lines 5-24). Moreover, the claims clearly describe the priority order to the validation items to be extracted by the extracting unit. (See Specification, page 21, lines 5-10).

Furthermore, the specification clearly states the input/output sequence is based on the validations items detected by the validation item extraction unit 609. (See Specification, page 29, lines 8-21).

Therefore, it is respectfully submitted that claims 5 and 6 satisfy the requirements of 35 U.S.C. §112, Second Paragraph. Thus, Applicant respectfully requests withdrawal of the rejection.

Claims 1, 11, and 12 are rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Publication No. 200400251123 (Angilivelil) and/or 102(b) as being anticipated by U.S. Publication No. 20020091980 (Buckley, Jr.). This rejection is respectfully traversed.

Angilivelil is related to a system and method to facilitate evaluation of integrated circuit chips through delay testing. According to Angilivelil, a test pattern generator receives target performance data and utilizes each respective target performance data to generate a corresponding test vector. (See Angilivelil, paragraph 0026). The test vector is based on the target performance data, critical path data, and circuit design description. Therefore, Angilivelil allows IDDQ testing which is commonly used in defect testing of integrated circuits containing CMOS devices. (See Angilivelil, paragraph 0026).

Applicant respectfully submits that independent claims 1, 11, and 12 are patentable over Angilivelil, as Angilivelil does not disclose each and every feature of the claims. Specifically, Angilivelil fails to disclose an extracting unit that extracts a combination of functional devices as a validation item from the validation item function, as recited in independent claim 1, for example.

The Office Action alleges that the test pattern generator 20, as shown in Figure 1 of Angilivelil, constitutes an extracting unit. (See Office Action, page 6). Applicant respectfully submits that the test pattern generator does not extract validation items. Rather, the test pattern generator 20 generates test vectors 22 based on the target performance data, the critical path data 18 and the circuit design description 16. (See Angilivelil, paragraph 25 and Figure 1). Therefore, the test pattern generator 20 simply operates to generate test vectors 28 to implement other known types of testing on the DUT 12. (See Angilivelil, paragraph 26 and Figure 1).

Buckley Jr. is related to a single pass method for generating test patterns for combinational circuits. Specifically, Buckley Jr. uses a single-pass ATPG method for finding all tests for all detectable faults in a combinational circuit.

Applicant respectfully submits that independent claims 1, 11, and 12 are patentable over Buckley Jr., as Buckley Jr. does not disclose each and every feature of the claims. Specifically Buckley Jr. fails to disclose to an extracting unit that extracts a combination of functional devices as a validation item from the validation item function, as recited in independent claim 1, for example.

Office Action alleges that the fault propagation function constitutes a validation item function. (See Office Action, page 6) Applicant respectfully submits that the fault propagation function does not function as a validation item function. Rather, the fault propagation function defines all primary input signal assignments that make a fault detectable at the output line. (See Buckley Jr., paragraph 0034 and figure 1). Therefore, deriving test from Boolean functions stored for output signals. (See Buckley Jr., figure 1).

Thus, independent claim 1, 11, and 12 are patentable over Angilivelil and Buckley Jr., as Angilivelil and Buckley Jr. fail to teach or suggest every element of the claims. As claims 2-10 depend from independent claim 1, the dependent claims are patentable over the references.

Accordingly, Applicant respectfully requests withdrawal of the rejection.

Claim 2 is rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,789,222 (Buckley, Jr.). This rejection is respectfully traversed.

Claim 2 depends from independent claim 1, and, therefore, it is respectfully submitted that claim 2 inherits the patentable features of independent claim 1.

The Office Action acknowledges that Buckley Jr. does not teach wherein the validation item function is expressed by a binary decision diagram. (See Office Action, page 7). However, the Office Action alleges that those of ordinary skill within the art at the time the invention was made would recognize that expressing the Boolean function(s) within a binary decision diagram(s) is well known.

A person of ordinary skill in the art would not have recognized expressing Boolean function within a binary decision diagram at the time Buckley Jr. was invented because Buckley Jr. does not teach or suggest expressing the validation item function in a binary decision diagram. Rather, uses a single pass ATPG method for finding all tests for all detectable faults in a combinational circuit which uses a Boolean function, none of which is expressed in a binary decision diagram. (See Buckley Jr., col. 3, line 50 – col. 4, line 37). Therefore, it is respectfully submitted that dependent claim 2 patentably defines over the reference. Thus, Applicant respectfully requests withdrawal of the rejection.

Claims 3, 4, 8, 9, and 10 are rejected under 35 U.S.C. §103(a) as being upatentable over U.S. Publication No. 200400251123 (Angilivelil) and/or U.S. Patent No. 6,789,222 (Buckley, Jr.). This rejection is respectfully traversed.

As noted above, independent claim 1 patentably distinguishes over Angilivelil and Buckley Jr. Claims 3, 4, 8, 9 and 10 depend from independent claim 1, and, therefore, inherit the patentable features of independent claim 1. Thus, it is respectfully submitted that claims 3, 4, 8, 9 and 10 also patentably distinguish over Angilivelil and Buckley Jr. Thus, Applicant respectfully requests withdrawal of the rejection.

Claim 7 is rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Publication No. 200400251123 (Angilivelil) and/or U.S. Patent No. 6,789,222 (Buckley, Jr.). This rejection is respectfully traversed.

As noted above, independent claim 1 patentably distinguishes over Angilivelil and Buckley Jr. Claim 7 depends from independent claim 1, and, therefore, inherits the patentable features of independent claim 1. Thus, it is respectfully submitted that claim 7 patentably distinguishes over the Angilivelil and Buckley Jr. Accordingly, Applicant respectfully requests withdrawal of the rejection.

The Office Action acknowledges that Angilivelil and/or Buckley Jr. does not teach dependent claim 7. (See Office Action, pages 10 and 11). Moreover, the Office Action relies upon AAPA to a method of extracting an input/output sequence from a functional block diagram created by using a predetermined description language. However, AAPA fails to cure the deficiencies of Angilivelil and Buckley Jr. as set forth above. Therefore, it is respectfully submitted dependent claim 7 patentably distinguishes over Angilivelil, Buckley Jr. and AAPA. Thus, Applicant respectfully requests withdrawal of the rejection.

Claim 14 is new. Support for the claim can be found on page 10, line 7 to page 12, line 18. The input/output sequence based on the validation items extracted from a combination of functional devices is not taught in the cited references. Moreover, the cited references fail to teach the extracted validation items are based on the costs of the validation items. Therefore, it is respectfully submitted that new claim 14, which is different and not narrower than prior filed claims, patentably distinguishes over the references.

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

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